## REMARKS

The Official Action mailed January 15, 2004, has been received and its contents carefully noted. Filed concurrently herewith is a *Request for Two Month Extension of Time*, which extends the shortened statutory period for response to June 15, 2004. Accordingly, the Applicant respectfully submits that this response is being timely filed.

Claims 25-200 are pending in the present application. Claims 29, 37, 45 and 53 have been amended to better recite the features of the present invention. In the *Response* filed October 30, 2003, the Applicant inadvertently omitted claim 71 from the list of elected claims. Claim 71, is similar to elected dependent claims 62, 80, 89, 98, 107, 116, 125, 134, 143, 152, 161, 170, 179, 188 and 197, and is directed to a method wherein the semiconductor device is a personal computer. Therefore, the Applicant respectfully requests that claim 71 be included with the elected claims. As such, claims 57-61, 63-70, 72-79, 81-88, 90-97, 99-106, 108-115, 117-124, 126-133, 135-142, 144-151, 153-160, 162-169, 171-178, 180-187, 189-196, and 198-200 are withdrawn from consideration. Accordingly, claims 25-56, 62, 71, 80, 89, 98, 107, 116, 125, 134, 143, 152, 161, 170, 179, 188, and 197 are currently elected, of which claims 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53 and 55 are independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 3 of the Official Action rejects claims 25-56, 62, 80, 89, 107, 116, 125, 134, 143, 152, 161, 170, 179, 188 and 197 as obvious based on U.S. Patent No. 5,219,786 to Noguchi. The Applicants respectfully traverse the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the

prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. The Official Action concedes that "Noguchi does not disclose preheating the substrate with a heated gas or cooling the substrate via a cooled gas" (page 2, Paper No. 2). The Official Action asserts that "using a heated gas to preheat a substrate and using a cooled gas to cool a substrate is conventional and well known in the art" (Id.). The Applicant respectfully disagrees and traverses the above assertions in the Official Action.

MPEP § 2144.03 discusses whether it is appropriate to rely on allegedly well known prior art. Specifically, this section provides as follows:

> It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known. For example, assertions of technical facts in the areas of esoteric technology or specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard in the pertinent art. *In re Ahlert*, 424 F.2d at 1091, 165 USPQ at 420-21. See also *In re Grose*, 592 F.2d 1161, 1167-68, 201 USPQ 57, 63 (CCPA 1979) ("[W]hen the PTO seeks to rely upon a chemical theory, in establishing a prima facie case of obviousness, it must provide evidentiary support for the existence and meaning of that theory."); *In re Eynde,* 480 F.2d 1364, 1370, 178 USPQ 470, 474 (CCPA 1973) ("[W]e reject the

> notion that judicial or administrative notice may be taken of the state of the art. The facts constituting the state of the art are normally subject to the possibility of rational disagreement among reasonable men and are not amenable to the taking of such notice.").

In the present case, the Applicant respectfully submits that the facts asserted to be well known ("using a heated gas to preheat a substrate and using a cooled gas to cool a substrate") are not capable of instant and unquestionable demonstration as being well-known. The Applicant further respectfully submits that it is not appropriate for the Official Action to assert that "using a heated gas to preheat a substrate and using a cooled gas to cool a substrate is conventional and well known in the art" without citing a prior art reference. It also appears that the above assertions in the Official Action are assertions of technical facts in the areas of esoteric technology or specific knowledge. Such assertions must always be supported by citation to some reference work recognized as standard in the pertinent art. Therefore, Noguchi does not teach or suggest preheating the substrate with a heated gas or cooling the substrate via a cooled gas.

Further, independent claims 25, 27, 31, 33, 35, 39, 41, 43, 47, 49, 51 and 55 recite that heated gas or cooled gas is supplied into a reaction tube, and a light source provided outside of the reaction tube is switched on/off in a pulse form to heat a substrate disposed in the reaction tube. In the present invention, because heated gas or cooled gas is supplied into a reaction tube, an atmosphere inside the reaction tube contains heated gas or cooled gas when desired. The reaction tube of the present invention is suitable for controlling an atmosphere, such as an atmosphere containing heated gas or cooled gas.

In contrast, Noguchi does not teach or suggest a reaction tube. The Official Action and Noguchi are silent as to this feature. Therefore, Noguchi does not teach or suggest that heated gas or cooled gas is supplied into a reaction tube, and a light source provided outside of the reaction tube is switched on/off in a pulse form to heat a substrate disposed in the reaction tube.

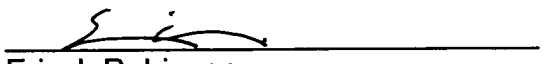
Independent claims 29, 37, 45 and 53 have been amended to recite heating the substrate in a first stage by switching on/off a lamp light source in a pulse form with a cycle of one second or shorter. As described in the specification, the light source is a lamp light source. The Official Action asserts that Noguchi teaches "switching on/off [a] light source in a pulse form of one second or shorter" (page 2, Paper No. 6). The Applicant respectfully disagrees and traverses the assertion in the Official Action.

Noguchi does not teach or suggest switching on/off a lamp light source with a cycle of one second or shorter. Noguchi is silent as to switching, on/off, a pulse or pulse form as applied to a lamp light source, or a cycle, much less a cycle of one second or shorter. Therefore, Noguchi does not teach or suggest heating the substrate in a first stage by switching on/off a lamp light source in a pulse form with a cycle of one second or shorter.

Since Noguchi does not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,



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